

Jennifer A. Holm

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EDUCATION

Doctor of Philosophy (May 2012)

University of Virginia

Charlottesville, VA

(Matriculated August 2008)

Major: Environmental Sciences

Advisor: Prof. Hank H. Shugart

Area of Concentration: Ecology

GPA: 3.8/4.0

Topics: Tropical forest ecology, simulation modeling, carbon and net primary productivity assessment.

Master of Science (Dec. 2007)

University of Florida

Gainesville, FL

(Matriculated August 2005)

Major: Interdisciplinary Ecology

Advisor: Prof. W. P. Cropper Jr.

Topic: Tropical Ecology and Population Modeling

Extra Concentration Certificate: Tropical Conservation and Development Certificate

GPA: 4.0/4.0

Bachelor of Science (August 2004)

Emory University

Atlanta, GA

Major: Environmental Studies

Minor: Anthropology

Advisor: Prof. W. Hickcox

PUBLICATIONS

1. In prep. **Holm, J.A.**, J.Q. Chambers, W.D. Collins. Impacts of prolonged disturbance from an Amazonian forest: lessons from a gap model for future model improvement. *Global Change Biology*.
 2. In prep. **Holm, J. A.**, H. H. Shugart, S. J. Van Bloem, and G. Larocque. Simulating hurricane disturbances in climate change scenarios: biomass and net primary productivity changes for a subtropical dry forest. *Global Change Biology*.
 3. **Holm, J.A.**, J. R. Thompson, W. J. McShea, and N. A. Bourg. 2013. Interactive effects of chronic deer browsing and overstory disturbance on forest successional dynamics. *Ecosphere*. 4:xx-xx.
 4. **Holm, J. A.**, H. H. Shugart, S. J. Van Bloem, and G. Larocque. 2012. Gap model validation for a subtropical dry forest and predicting poor transition of abandoned fields into secondary forests in Puerto Rico. *Ecol. Modelling* 233: 70-82.
 5. Cropper, W. P. Jr., **J. A. Holm**, C. J. Miller. 2012. An inverse analysis of a matrix population model using a genetic algorithm. *Ecological Informatics* 7:41-45.
 6. Pack, J., L. Unruh Snyder, T. Durham, **J. A. Holm**, F. Allen, J. Leeds, R. Arias. 2011. Comparative agroecosystem sustainability of five Honduran crop production systems. *Inten. J. of Environmental, Cultural, Economic and Social Sustainability* 7: 121-132.
 7. Shiels, A., J. Zimmerman, D. Garcia-Montiel, I. Jonckheere, **J. A. Holm**, D. Horton, N. Brokaw. 2010. Plant responses to simulated hurricane impacts in a subtropical wet forest, Puerto Rico. *J. of Ecology* 98: 659-673.
 8. **Holm, J. A.**, C. J. Miller, and W. P. Cropper Jr. 2008. Population dynamics of the dioecious Amazonian palm *Mauritia flexuosa*: simulation analysis of sustainable harvesting. *Biotropica* 40: 550-558.
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WORK EXPERIENCE / PAST RESEARCH

Postdoctoral Fellow

Lawrence Berkeley National Lab, Earth Sciences Division, Climate Sciences Division
Berkeley, CA

July 2012 - present

Projects: Green Ocean Amazon Terrestrial Ecosystem Collaborative Project (Geco)
Community Land Model (CLM) develop for the Integrated Earth System Modeling (iESM) Project

Visiting Scientist

March – June 2012

*Smithsonian Conservation Biology Institute, Conservation Ecology Center
Front Royal, VA*

Forest modeling and impacts of deer browsing and canopy gap disturbances on forest succession.

International LTER/CTFS Workshop Participant

July 12-23, 2010

*Second Analytical Workshop on Dynamic Plot Database Application and Tool Design
Taipei, Taiwan and Kuala Lumpur, Malaysia*

Interviewed and selected as one of the two graduate students to collaborate with forest ecologists at the Taiwan Forest Research Institute, and then participate in a workshop analyzing biodiversity and long-term datasets collected within US-LTER, ILTER, CTFS/SIGEO forest dynamic plots through-out the globe.

Field Research – Hyperspectral NASA experiment

January – February 2010

*Southwestern Puerto Rico, NASA-EPSCoR
Grant No. NNX09AV03A*

Conducted terrestrial ground-truthing and calibration work for a large hyperspectral imagery classification project for southwestern Puerto Rico, and calibrating airborne hyperspectral imagery runs.

Field Research – Data Collection

May – July 2008

*Sian Ka'an Reserve and Calakmul Biosphere Reserve
Southern Yucatan, Mexico*

Collected data to look at the ecological impacts of hurricane damage on the seasonal dry sub-tropical forests of the southern Yucatan Peninsula. Data will be used to assess hurricane damage at the landscape level within and outside protected areas. Data collection for PhD Dissertation – (graduate researcher).

Program Coordinator

May 2004 – July 2005, Jan. 2008-June 2008

Georgia Institute of Technology, Atlanta, GA

Organized and coordinated professional education short courses, conferences, and seminars. Duties involved organizing, booking, marketing, and fully coordination of events, registering students and managing budgets.

Field Research Technician

September 2007 – December 2007

*Luquillo Experimental Forest, El Verde Field Station,
Puerto Rico*

Conducted field data collection for the on-going Long-Term Ecological Research (LTER) Project, which looks at the impact and response to hurricane disturbance on tropical forested ecosystems.

Field Research – Data Collection

May 2006 – June 2006

Amazon Basin (Lowlands), Loreto, Peru

Collected plant demographic data and conducted sampling of the economically useful palm, *Mauritia flexuosa* in the tropical forest of Peru. Investigated the differences between wild harvesting and cultivated plantings of the same palm. Collaborated with a NGO to help local communities and families to successfully cultivate *Mauritia flexuosa* in homegardens to reduce the impact of unsustainable harvesting. Data collected for master thesis (graduate researcher).

Internship

January-May, 2004

Chattahoochee Nature Center, Atlanta, GA

Volunteer work to recreate a natural wetland bog containing purple and white-tipped pitch plants.

Internship

June 2003 – May 2004

Atlanta Botanical Gardens, Atlanta, GA

Tropical pitcher plant (*Nepenthes*) caretaker, native bog restoration, and tissue culture lab clean-up work, from September 2003 to May 2004. Environmental Summer Camp Counselor, during the summer of 2003.

School for Field Studies

June 2002-July 2002

Atherton Tablelands Rainforest, Queensland, Australia

Worked on a continuing 5-year project of creating habitat corridors between fragmented and isolated rainforest patches. Also took courses in tropical restoration, tropical plant identification, and tropical ornithology.

INVITED ABSTRACTS AND PRESENTATIONS

1. **Holm, Jennifer.** Scientific presentation at 2011 CARICOM Annual Board Meeting and Seminar, Placencia, Belize. July 20-24, 2011.
2. **Holm, Jennifer,** Dr. Deborah Lawrence, Dr. Laura Schneider, Dr. John Rogan, Dr. Birgit Schmook. "Environmental disturbance in the Greater Yucatan (EDGY) Project." *Joint USLTER/MEXLTER Meeting on Response to Disturbance*. Merida, Mexico. January 13-15, 2009.
3. **Holm, Jennifer,** Dr. Jess Zimmerman, Aaron Shiels, Dave Horton. "Canopy Trimming Experiment (CTE) Results, Luquillo Puerto Rico." *Joint USLTER/MEXLTER Meeting on Response to Disturbance*. Merida, Mexico. January 13-15, 2009.

PRESENTATIONS WITHOUT PROCEEDINGS (CONTRIBUTED ABSTRACTS)

1. **Holm, J.A.** J.Q. Chambers. "Forest mortality and disturbance in the Community Land Model (CLM)." *CESM Land Model and Biogeochemistry Working Group Meetings*. Boulder, CO. February 20-22, 2013.
2. **Holm, J.A.,** J.Q. Chambers. "Regional impacts of Atlantic Forest deforestation on climate and vegetation dynamics." *Presentation at the AGU Fall Meeting*. San Francisco, CA. December 5-9, 2012.
3. **Holm, J.A.,** Dr. H. H. Shugart, S. J. Van Bloem, G. Larocque. "Gap model validation for a subtropical dry forest and response to hurricane disturbances in climate change scenarios." *Presentation at the AGU Fall Meeting*. San Francisco, CA. December 5-9, 2011.
4. **Holm, J.A.,** Dr. H. H. Shugart, S. J. Van Bloem, G. Larocque. "Gap model validation for a subtropical dry forest and predicting poor transition of abandoned fields into secondary forests in Puerto Rico." *Presentation at EnviroDays 2011*, University of Virginia. January 18th 2011.
5. Pack, P., L. U. Snyder, A. Huber, T. Durham, **J.A. Holm,** F. Allen, J. Leeds, R. Arias. "Comparative agroecosystem sustainability of five Honduran crop production systems." *7th International Conference on Environmental, Cultural, Economic, and Social Sustainability*. New Zealand, January 5-7, 2011.
6. **Holm, J.A.,** Dr. H. H. Shugart, Dr. Skip Van Bloem. "Gap dynamic modeling of a dry tropical forest: monitoring forest change and succession in Puerto Rico with changing environments. *Poster presentation at the ESA 95th Annual Meeting*. Pittsburg, PA. August 1-6, 2010.
7. **Holm, J.A.,** Dr. Laura Schneider, Dr. John Rogan, Dr. Birgit Schmook. "Large-scale damage assessment from Hurricane Dean in the dry tropical forests of the Yucatan Peninsula". *Presentation at the ESA 94th Annual Meeting*. Albuquerque, New Mexico. August 2-7, 2009.
8. **Holm, J.A.,** D. Horton, J. K. Zimmerman, A. Shiels. "Tree dynamics following simulated hurricane damage in the Luquillo Experimental Forest, Puerto Rico." *Poster presentation at the ESA 93rd Annual Meeting*. Milwaukee, WI, August 4-8, 2008.
9. Cropper, W. P. Jr., **Holm, J. A.,** Miller, C. J. "Genetic algorithm evaluation of parameters of a density dependent matrix population model." *Presentation at the ESA 93rd Annual Meeting*. Milwaukee, WI, August 4-8, 2008.
10. **Holm, J.A.** "Population Dynamics of the Amazonian Palm *Mauritia flexuosa*: Model Development and Simulation Analysis". *School of Natural Resources and Environment Seminar Presentation*. University of Florida, April 24th, 2007.
11. **Holm, J.A.** "A Closer Look at Crop Production of the Tropical Palm *Mauritia flexuosa* from

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- Homegardens in Peru Compared to Natural Harvesting in Ecuador”, *Presenter at the 1st Student Tropical Crop Production Conference*. Zamorano University, Honduras, March 9th-10th, 2007.
12. **Holm, J.A.**, W. P. Cropper, C. J. Miller. “Population Dynamics of the Amazonian Palm *Mauritia flexuosa*: Data Collection, Model Development, and Simulation Analysis”, *Poster presentation at the LATAM Field Research Clinic*. University of Florida, February 8th, 2007.
13. Miller C. J., **Holm J. A.**, Cropper W. P. Jr. “Population Dynamics of the Morete Palm (*Mauritia flexuosa*) in the Ecuadorian Amazon”, *Presenter at the ESA’s 91st Annual Meeting: Icons and Upstarts in Ecology*. Memphis, Tennessee, August 6-11, 2006.
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TEACHING EXPERIENCE

Graduate Teaching Assistant

August 2008 – May 2012

University of Virginia, Charlottesville, VA

Fundamental of Ecology Lab section – 14 students. 300 level majors course enrolling ~100 students.

Management of Forest Ecosystems – 16 students.

Global Ecology – 16 students.

Practical Concepts in Environmental Sciences – 15 students

Forest Field Sampling – 15 students

University of Florida, Gainesville, FL

August 2005 – May 2007

Teaching assistant for a School of Forest Resources and Conservation undergraduate course, titled Forests for the Future.

GRANTS

- Robert J. Huskey Travel Fellowship - \$350.00 May 2011
University of Virginia
 - 2008 EPA STAR and EPA GRO Graduate Fellowship Applicant (not awarded; received “very good” scores) October 2007
 - School of Natural Resources and Environment Travel Grant Recipient - \$250.00 August 2006
University of Florida
 - Tropical Conservation and Development Field Research Grant Recipient - \$2000.00 May 2006
University of Florida
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HONORS & AWARDS

- Delta Epsilon Iota Academic Honor Society Membership April 2007
 - Gamma Sigma Delta Honor Society Membership December 2006
 - Alpha Zeta Honor Fraternity Nomination September 2006
University of Florida
 - Valedictorian May 2000
Alexander High School
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GRADUATE COURSES – University of Virginia

- Forest Ecology and Management
 - Research Planning
 - Catchment Hydrology
 - Environmental Meteorology and Climatology
 - Geomorphology
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GRADUATE COURSES – University of Florida

- Applied Forest Ecology
- Ethnoecology
- Principles of Natural Resource Management
- Forest Management Policies and Issues

- Simulation Analysis of Forest Ecosystems
- Community Forest Management
- Facilitation Skills for Adaptive Management
- Tropical Crop Production (with trip to Honduras)
- Research Planning
- Statistical Methods in Research I

Skills

- Programming capabilities in Python, Matlab, C++, SPSS, SAS, R
- Basic GIS skills

Educational Activities

- Environmental Sciences Graduate Student Association Co-Chair - UVA
- School of Natural Resources and Environment Graduate Student Council Officer - UF

References Available Upon Request